Patent claims

1. Agents for treating human illnesses based on substances which affect the interaction between ß-catenin and transcription factors and tumor suppressor gene products.

2. Agents for treating human illnesses based on substances which inhibit the interaction between ß-catenin and transcription factors and tumor suppressor gene products.

3. Agents for treating human illnesses based on substances which promote the interaction between ß-catenin and transcription factors and tumor suppressor gene products.

4. Agents according to claim 1 wherein they affect the interaction between ß-catenin and LEF-1

5. Agents according to claim 1 wherein they affect the interaction between ß-catenin and TCF-4.

6. Agents according to claim 1 wherein they affect the interaction between ß-catenin and APC 15 or AP 20 amino acid repeats.

7. Agents according to claim 1 wherein they affect the interaction between ß-catenin and conductin.

8. Agents according to claim 1 wherein they affect the interaction between ß-catenin and E-cadherin.

9. Peptides covering parts of the LEF-1/TCF-4 transcription factors and their variants and mutants.

10. Peptide according to claim 9 consisting of the 10-40 amino acid long sequences from the N-terminal area of LEF-1 or TCF-4.

11. Peptide according to claims 9 –10 consisting of the N-terminal amino acids 11-34 of LEF-1 of the following sequence
GDPELCATDEMIPFKDEGDPQKEK

12. Peptide according to claims 9 –10 consisting of the N-terminal amino acids 14-27 of LEF-1 of the following sequence
ELCATDEMIPFKDE

13. Peptide according to claims 9 –10 consisting of the N-terminal amino acids 7-29 of TCF-4 of the following sequence
GGDDLGANDELISFKDEGEQEEK

14. Peptide according to claims 9 –10 consisting of the N-terminal amino acids 10-23 of TCF-4 of the following sequence
DLGANDELISFKDE

15. Peptide according to claims 9-14 wherein it contains acid amino acids at a distance of 5 amino acids flanked by hydrophobic amino acids and containing a basic amino acid.

16. Use of peptides according to claims 9-15 for treating tumors wherein peptides are coupled with a second peptide and are thereupon applied in an appropriate form.

17. Use according to claim 16 wherein antennapedia peptide RQIEIWFQNRRMEWEE is used as second peptide.

18. Use according to claim 16 wherein peptides and binding regions are modified to increase the stability (peptidomimetics).

19. Use of peptides and binding regions according to claim 16 wherein their carbon skeleton is substituted by carbon skeletons with the same arrangement of functional groups (non-peptidomimetics).

20. Peptides and similar molecules from the armadillo domain (arm units 3-8) of ß-catenin (sequences according to Annex: Table 1) and the mutants in the context of the whole ß-catenin molecule covering at least one of the specific interaction domains towards LEF-1, TCF-4, APC, conductin or E-cadherin.

21. Peptides and binding regions of ß-catenin according to claim 20 covering the area of His 470 and/or Arg 469 and fragments thereof (LEF-1/TCF binding site).

22. ß-catenin mutants according to claim 20 with the mutation His 470 and/or Arg 469.

23. Peptides and binding regions of ß-catenin covering the area of Trp383 and fragments thereof (APC binding site, 20 mino acid repeats).

24. ß-catenin mutants according to claim 20 with the mutation Trp 383.

25. Peptides and binding regions of ß-catenin according to claim 20 covering the area of Arg 386 and fragments thereof (APC binding site, 15 amino acid repeats).

26. ß-catenin mutants according to claim 20 with the mutation Arg 386.

27. Peptides and binding regions of ß-catenin according to claim 20 covering the area of Arg 386, Phe 253, Arg 274, Trp 338 and fragments thereof (conductin binding site).

28. ß-catenin mutants according to claim 20 with one of the following mutations: Arg 386, Phe 253, Arg 274, Trp 338 or a combination thereof.

29. Use of substances obtained by means of peptidomimetics or non-peptidomimetics from the claims 20-28.

30. Use of peptides and similar molecules according to claims 20-28 to build up agents for treating tumors, tissue and organic damage, e.g. psilosis.

31. Use of peptides and similar molecules according to claims 20-28 for screening substances which highly specifically inhibit or intensify one of the interactions of ß-catenin with LEF/TCF, APC, conductin or E.cadherin.

32. Use of peptides and similar molecules according to claims 20-28 inhibiting the interaction between ß-catenin and LEF/TCF, APC, conductin or E-cadherin for treating tumors.

33. Use of peptides and similar molecules according to claims 20-28 which promote the interaction between ß-catenin and LEF/TCF, APC, conductin or E-cadherin for the regeneration of tissue and organs (e.g. for promoting growth of hair).

34. ELISA for screening of substance libraries for components which affect the interaction between Я-catenin and LEF-1/TCF, APC, conductin and E-cadherin.

35. ELISA according to claim 35 containing peptides and mutants and similar molecules according to claims 9-15, 20-28 to identify substances for treating tumors, regeneration of tissue and organs.